

**KENWOOD**  
HI/FI STEREO COMPONENTS

# SERVICE MANUAL

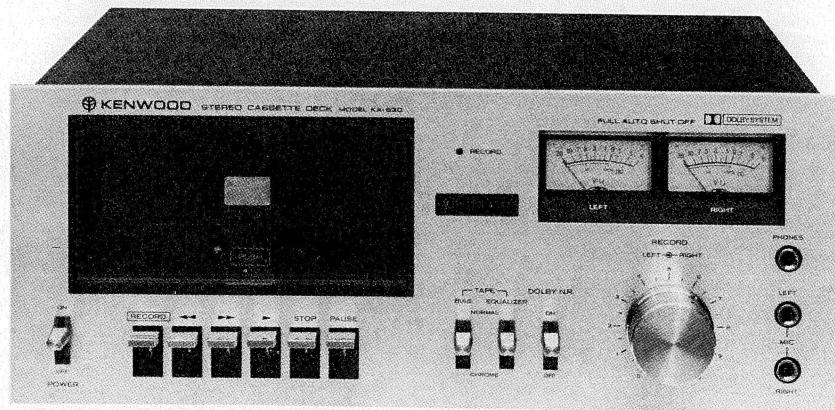
**KX-530  
(KX-503)**

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**NOTE:**

Refer to the KX630 service manual as to OPERATION OF MECHANISM, DISASSEMBLY, MECHANISM ADJUSTMENT, CLEANING, LUBRICATION and TROUBLESHOOTING.

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**STEREO CASSETTE DECK**

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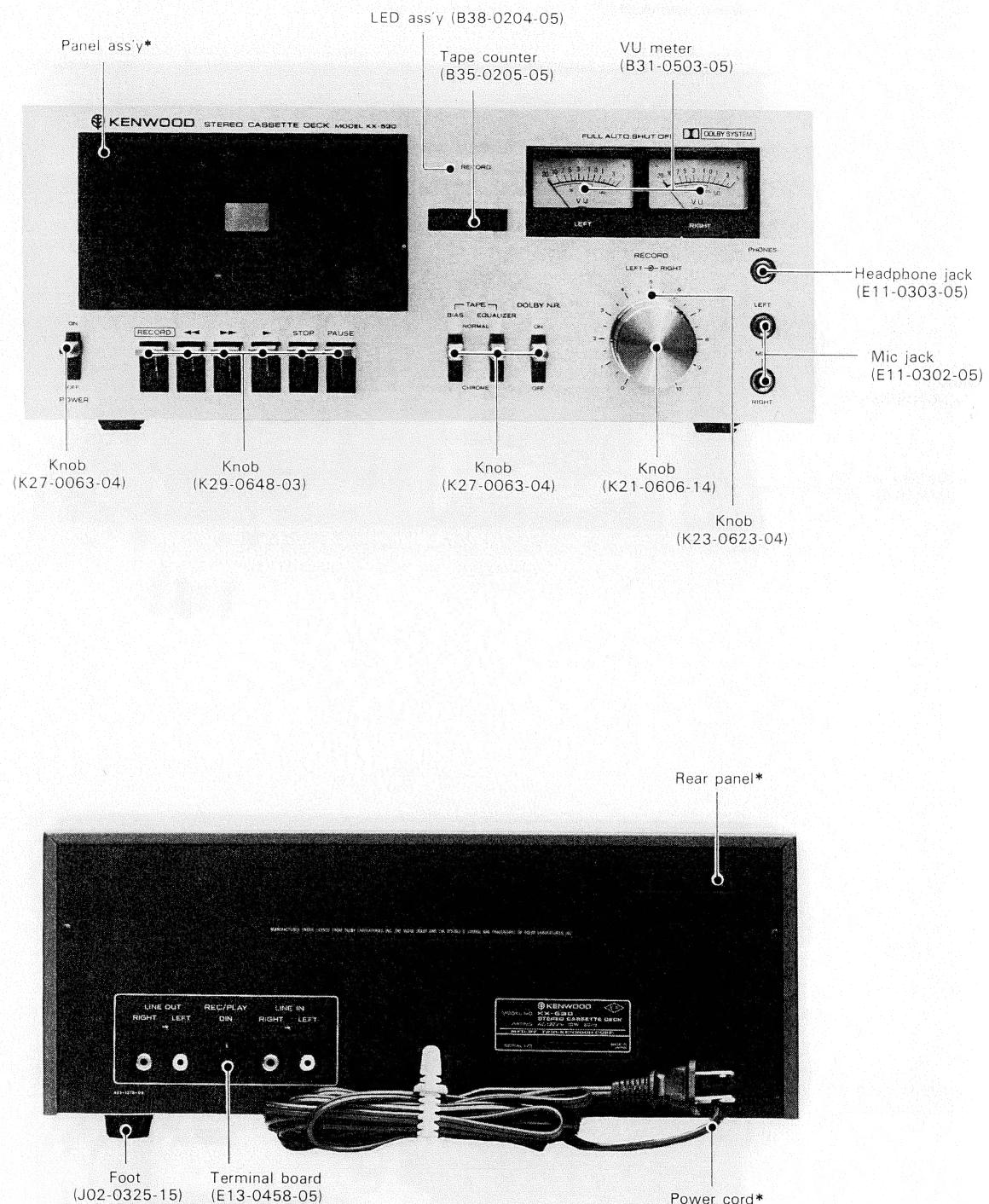
## Note:

The products are subject to modification in components and circuits in different countries and regions. This is because each product must be used under the best condition. This manual provides information of modification based on the standard in the U.S., for the convenience of ordering associated components and parts.

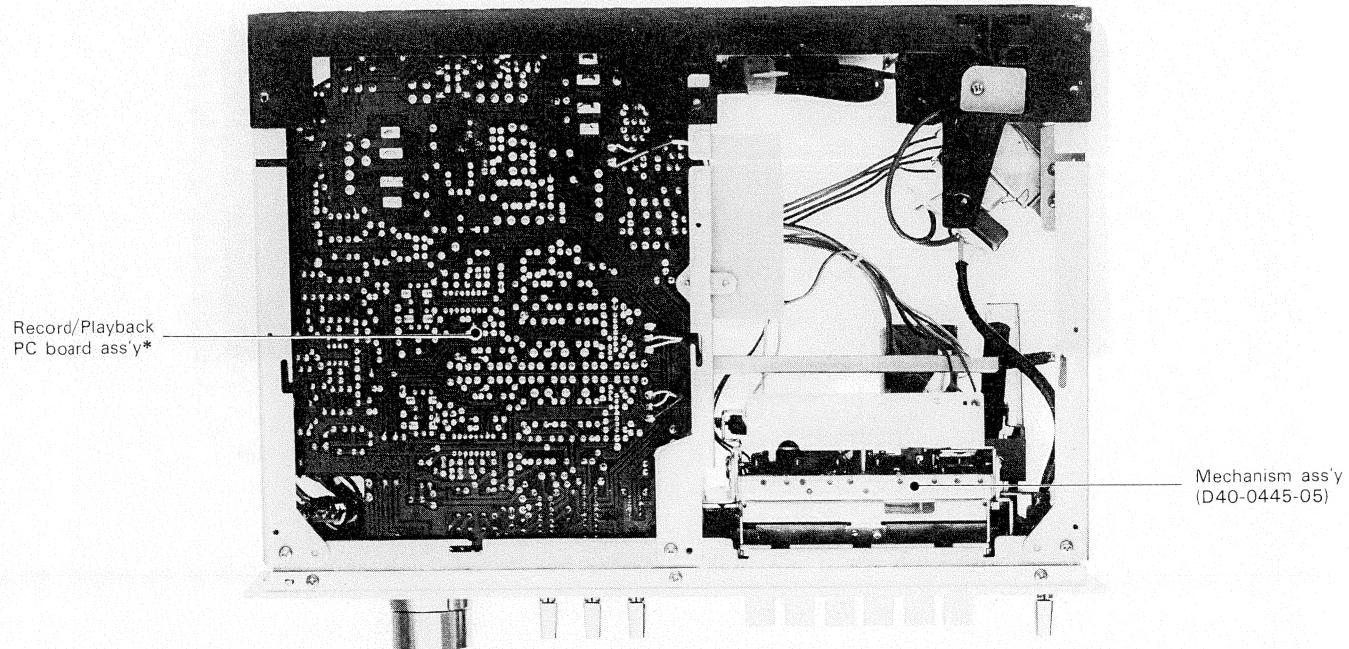
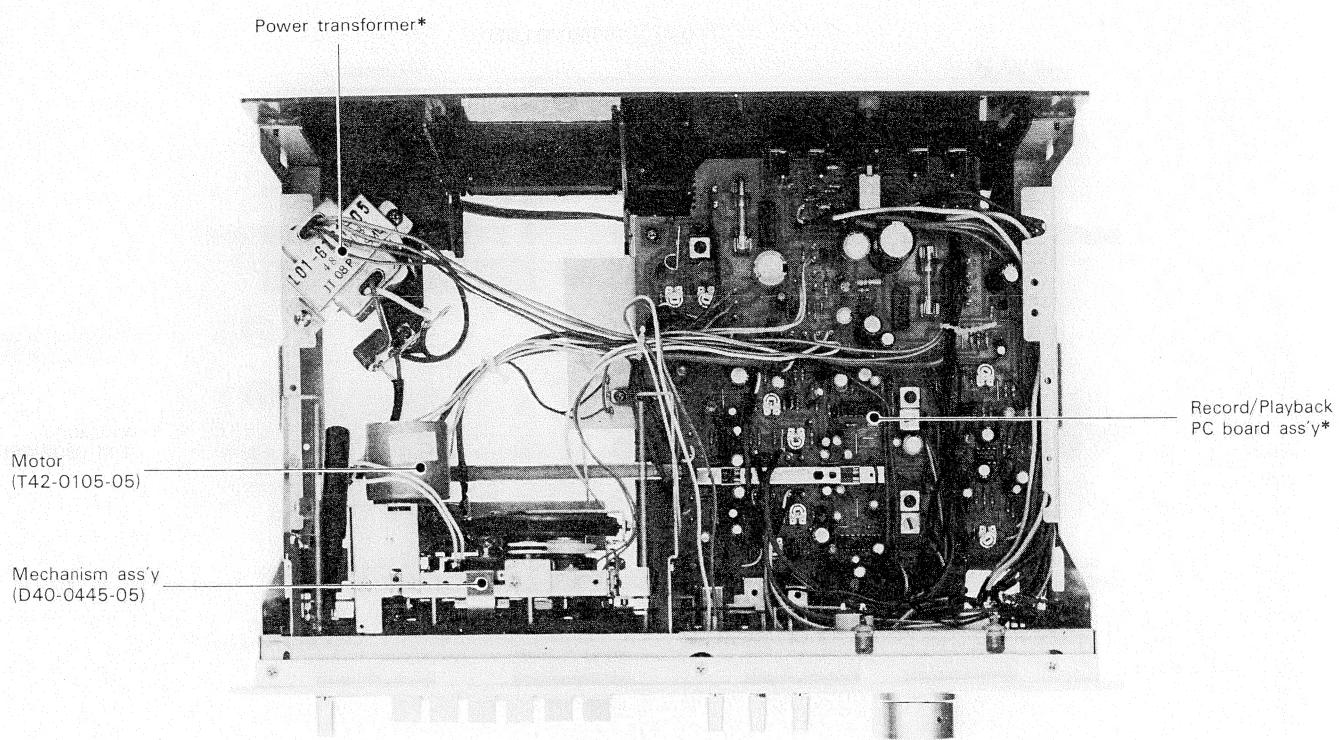
U.S.A.....	K
Canada.....	P
PX.....	U
Australia.....	X
Europe.....	W
England.....	T
South Africa.....	S
Other Areas.....	M <sub>1</sub>
Audio Club.....	KX-503 (Hu)

Dolby is a Trade Mark of Dolby Laboratories, Inc.

## EXTERNAL VIEW

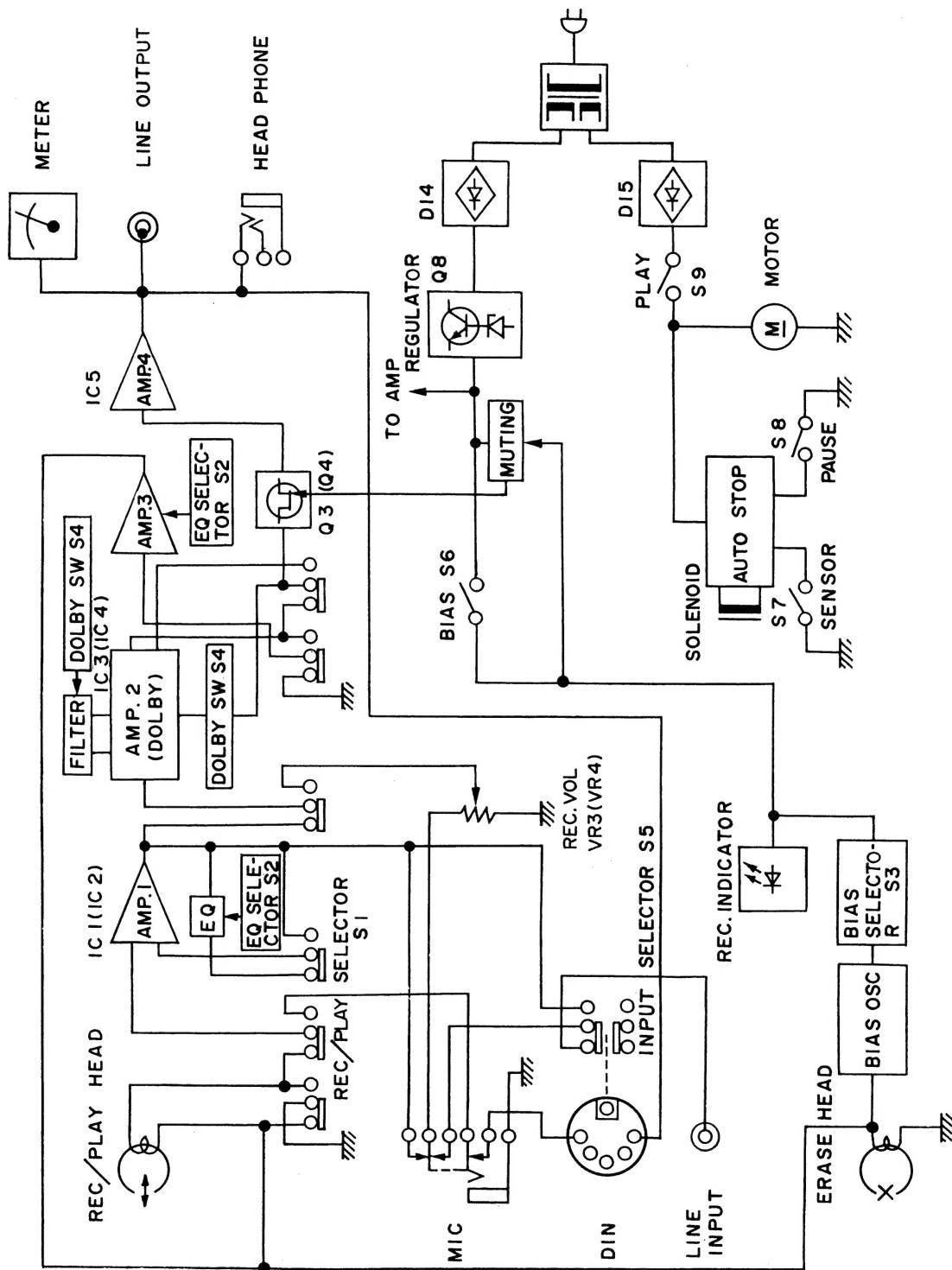


\* Refer to Destinations' Parts List.

**INTERNAL VIEW**

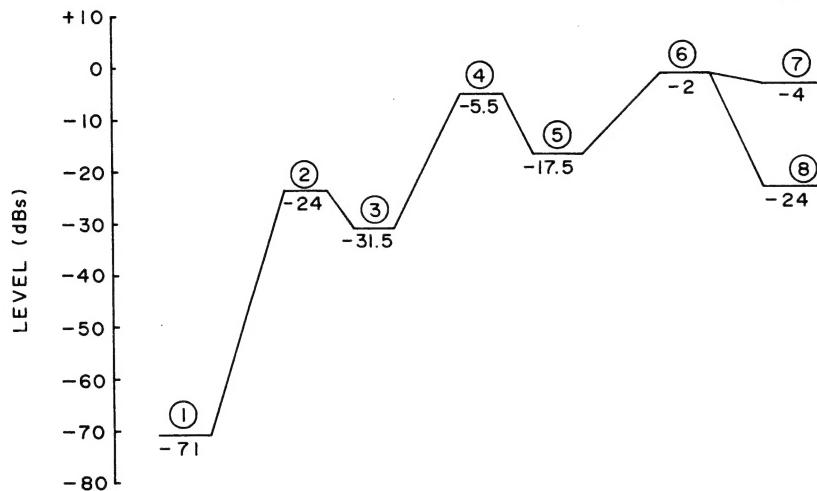
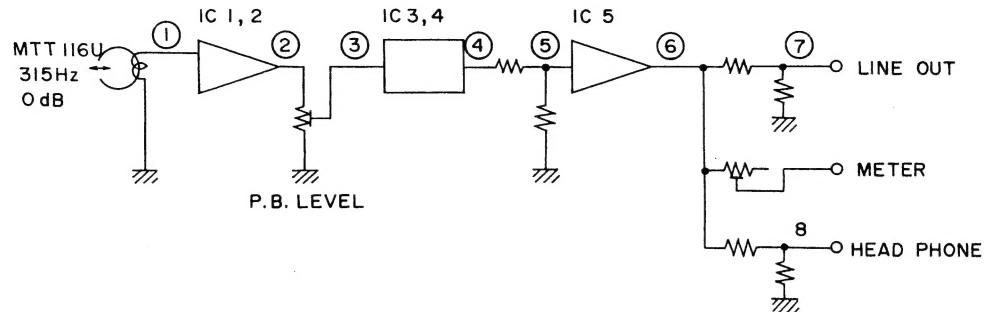
\*Refer to Destinations' Parts List

## BLOCK DIAGRAM

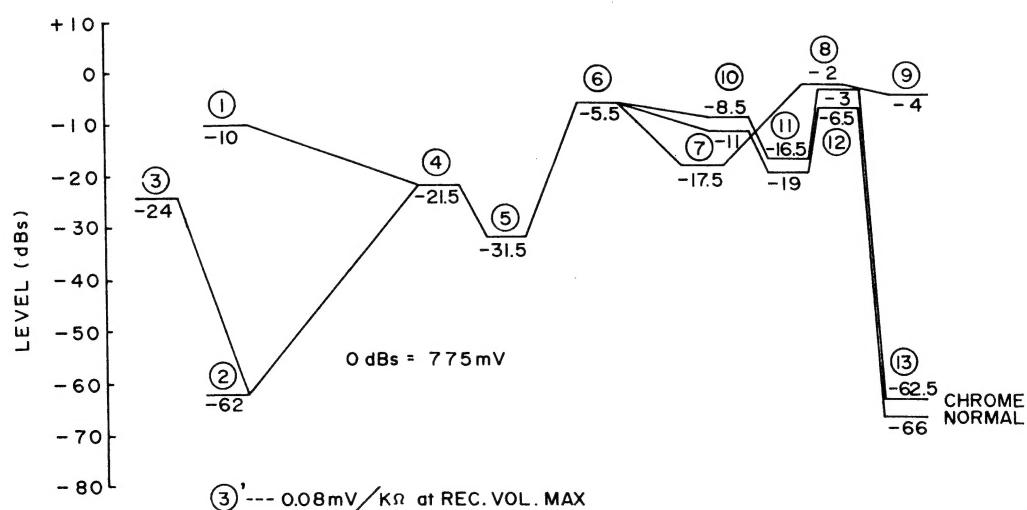
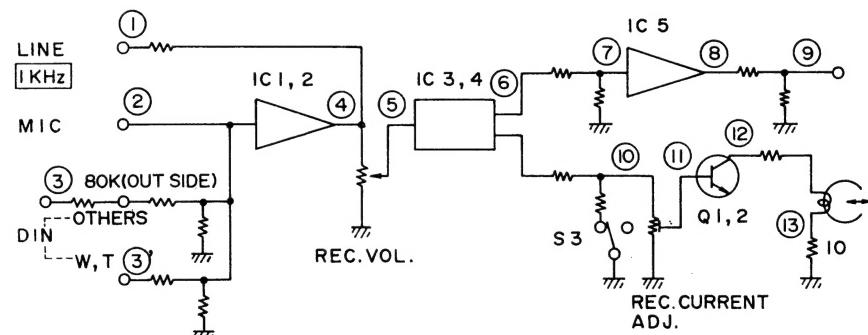


## LEVEL DIAGRAM

## PLAYBACK MODE



## RECORD MODE



## CIRCUIT DESCRIPTION

### Noise prevention when power is switched on.

Immediately after the power is turned on, Q5 is in the OFF state. Three or four seconds, which is the time constant determined by R79 and C71, after the power is switched on, Q5 is turned on and +B is supplied to IC5 to actuate the circuit.

### Auto shut-off circuit

In the playback (►), fast forward (►►), and rewind (◀◀) modes, the take-up reel ass'y rotates. At the same time, the switch (sensor) on the reel ass'y, closes and opens repeatedly. This causes C87 to repeatedly charge and discharge and Q12 to turn on and off repeatedly.

Since C89 is not charged, Q9 and Q10 stay off and the plunger is not activated.

When tape rewinding has been completed, the take-up reel ass'y stops rotating, and then the switch board ceases functioning. C87 stops charging and discharging, causing Q12 to become off. C89 begins to charge, and it triggers the base of Q10 to a potential determined by the collector potential of Q12 and R101 ~ 103. When this potential exceeds 0.6V, Q10 and Q9 are turned on to energize the plunger. With the PAUSE switch S8 in the ON condition, Q12's collector is automatically grounded and Q10 becomes off. Therefore the plunger does not move.

### Noise prevention when switching the REC/PLAY

#### switch S1

Q3 (Q4) is usually conducting with VGS forward biased at 0V. (pinch-off voltage: -0.25 to -4.5V). When stopping the recording (S6 is opened), the negative pulse is occurred and it triggers the base of Q14 to turn it on.

Then, the emitter potential of Q14 falls and Q3 becomes open.

### Bias switching

Changing +B which is supplied to Q11 can alter the bias current in both the NORMAL and CHROME modes.

## ADJUSTMENT

## 1. Test Instrument

- \*Solid state volt meter: SSVM
- \*Audio frequency generator: AG
- \*Oscilloscope
- \*Frequency counter
- \*Wow and flutter meter
- \*Weighting filter  
(ASA A characteristic with NAB curve)
- \*Band pass filter  
(Attenuation: 75 dB/oct. or more)
- \*Cassette type torque gauge
- \*Spring balance
- \*Torque dial
- \*Head demagnetizer

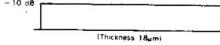
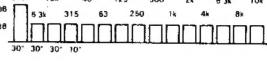
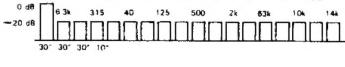
## 2. Test Tape

- a) Test tape for recording system adjustment  
NORMAL:  
MAXELL UD-XL1 (T93-0013-05)  
CHROME (for measurement):  
TDK AC-511 (T93-0010-05) or SAC-60
- b) Test tape for playback measurement  
TEAC MTT-111 (Tape speed, azimuth)  
TEAC MTT-116R (Frequency characteristic)  
TEAC MTT-116U (Frequency characteristic)

## 3. Notes for Adjustments and Measurements

1. **Load resistance:** A pure resistance load of 100k $\Omega$  should be connected to the LINE OUTPUT terminal.
2. **Standard level:** 0 dBs = 0.775 V
3. The electrical system should be adjusted by dividing it into playback and recording.  
Adjustment of recording requires perfect performance of the playback system.  
No special adjustment can be required unless inner components are replaced.
4. When the head is replaced, its stray magnetism must be completely erased by the demagnetizer prior to mounting the tape.
5. Unless otherwise designated, measurement should be carried out with the Dolby NR switch off.

## TEST TAPE SPECIFICATION

MODEL	TITLE	DESCRIPTION			APPLICATION
		TIME CONSTANT	FREQ./LEVEL	PROGRAM	
MTT-111	FLUTTER		3kHz -10 dB		30 Min.
MTT-116R	FREQUENCY	1590 $\mu$ s and 120 $\mu$ s	40Hz~10kHz 0dB/-20dB 0dB: DIN REFERENCE LEVEL		Frequency Response Test
MTT-116U	FREQUENCY	3180 $\mu$ s and 120 $\mu$ s	315Hz~14kHz 0dB/20dB 0dB: DIN REFERENCE LEVEL -4dB		Frequency Response Test

## ADJUSTMENT

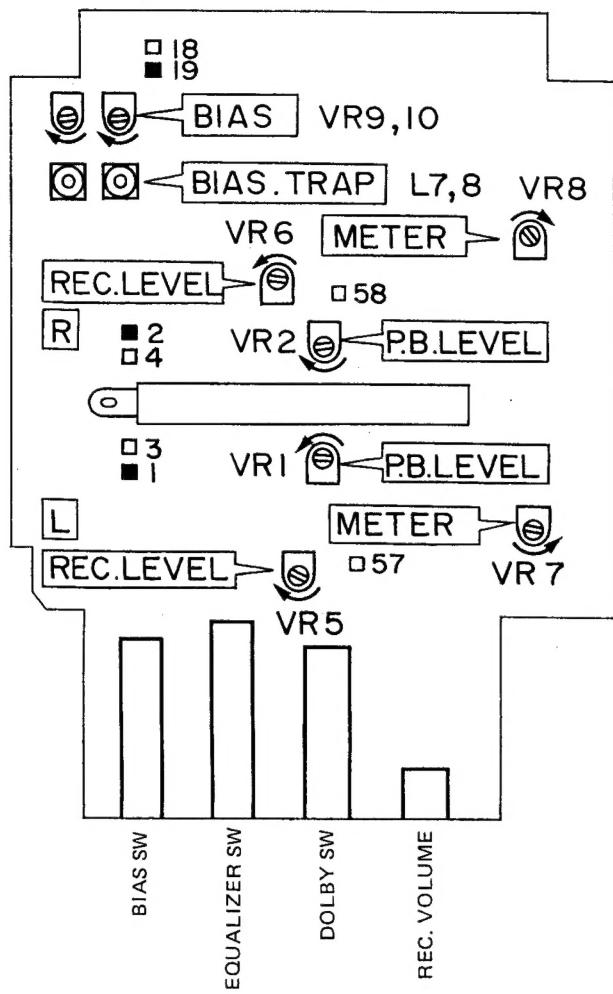
Dolby NR SW : OFF, NORMAL position

0 dBs = 0.775V  
= 0 dBm

NO.	ALIGN	INPUT SIGNAL	CHECK POINTS	DECK SETTING	ADJUSTING POINTS	ADJUSTING METHOD	REMARKS
1.	DEMAGNETIZING	—	R/P head Capstan	Power: off	—	Demagnetizing	Head demagnetizer
2.	BIAS TRAP & BIAS OSCILLATING FREQUENCY	—	TP57, 58	Recording mode REC VOL: Min	L7, 8	Minimum output (85 kHz)	Check the oscillating frequency. Standard: 85kHz $\pm 10\%$ . Replace Osc. coil L9, if it is deviating from the standard.
3.	BIAS LEVEL (preparation)	—	Terminal No. 3, 4	Recording mode	VR9, 10	Adjust the AC voltage to 3.9 mV	Required only when replacing the R/P head
4.	REC LEVEL (preparation)	1 kHz —20 dBs	TP57, 58	Recording mode REC VOL: Max Short terminal 18 to terminal 19.	VR5, 6	Adjust the AC voltage 300 mV	Required only when replacing the R/P head
5.	TAPE SPEED	MTT-111	LINE OUT	Playback	Trimming potentiometer in the DC motor	Adjust the frequency to 3000 Hz	
6.	AZIMUTH	MTT-116R 10 kHz, —10 dB	LINE OUT	Playback	Azimuth screw (left side)	Output level (L, R): Max	Reference: —10 dBs
7.	PLAYBACK LEVEL	MTT-116R 315 Hz, 0 dB	LINE OUT	Playback OUTPUT VOL: Max	VR1, 2	Output level: 0 dBs	
8.	VU METER	LINE IN 1 kHz, —10 dBs	LINE OUT & VU meter	Recording mode Set the REC VOL position so that the output level is —4 dBs.	VR7, 8	VU meter: 0 VU	
9.	REC LEVEL	LINE IN 1 kHz, —10 dBs UD-XL1 (NORMAL)	LINE OUT	REC VOL position: Same as '8' Recording $\rightarrow$ Playback	VR5, 6	Output level: —4 dBs	
10.	OVERALL FREQUENCY CHARACTERISTIC	LINE IN 1 kHz, —30 dBs 10 kHz —30 dBs UD-XL1 (NORMAL) Dolby NR switch: ON	LINE OUT	REC VOL position: same as '8'  Recording $\rightarrow$ Playback	VR9, 10	Make the outputs of 1 kHz and 10 kHz equally.	

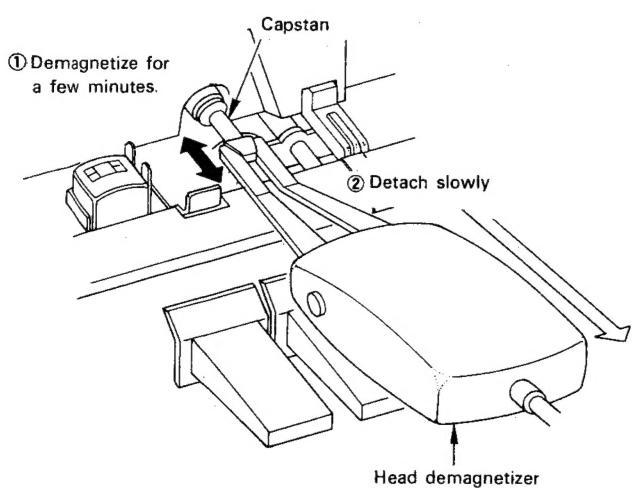
**Note:** 1. The bias becomes insufficient and high frequency range raise when turning VR9 or VR10 counterclockwise.  
 2. Since VR9 and VR10 are adjusted in BIAS LEVEL, they should be adjusted slightly in OVERALL FREQUENCY CHARACTERISTIC.  
 3. Repeat the alignments of (9, 10) a few times.

## **ADJUSTMENT**



## Top view of X28-1290

**(1) DEMAGNETIZING (Power off)**



## (2) BIAS TRAP & BIAS OSCILLATING FREQUENCY

### L7, 8 (Recording mode, REC Vol. Min)

osc

85 kHz ( $\pm 10\%$ )

SSVM=0.3V

### (3) BIAS LEVEL (Preparation)

VR9, 10 (Recording mode) SSVM = 3.9 mV

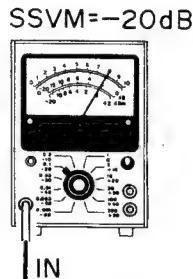
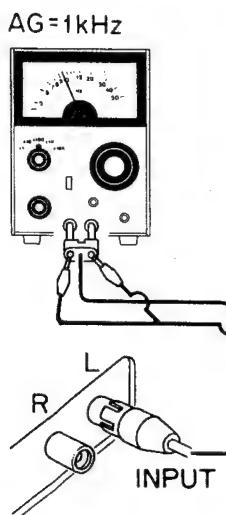
SSVM=3.9mV

OSC

## ADJUSTMENT

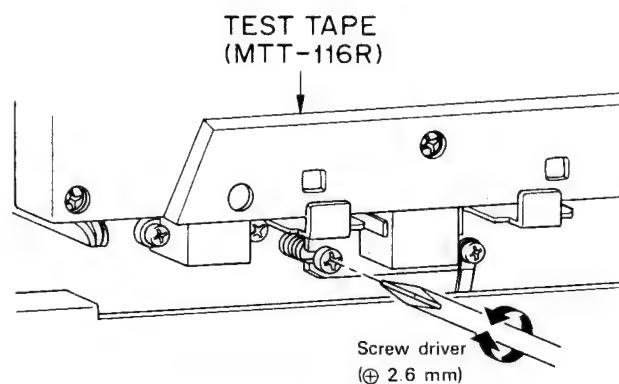
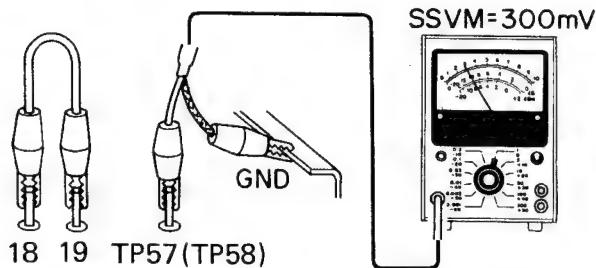
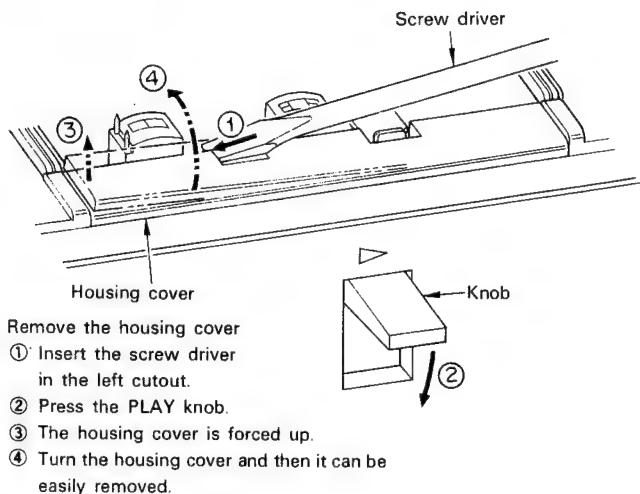
## (4) REC LEVEL (Preparation)

(VR5, 6 (Recording mode, REC VOL. Max.))



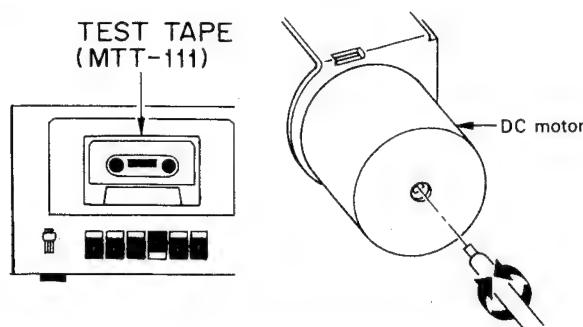
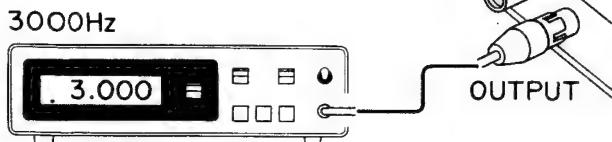
## (6) AZIMUTH

(Playback)

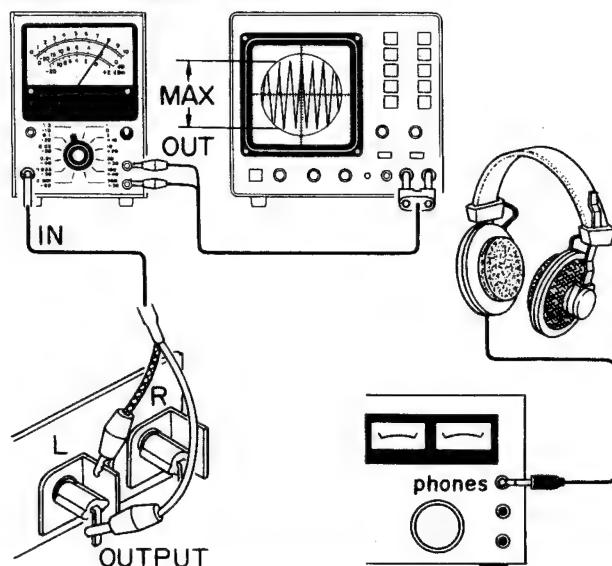


## (5) TAPE SPEED

(Playback)



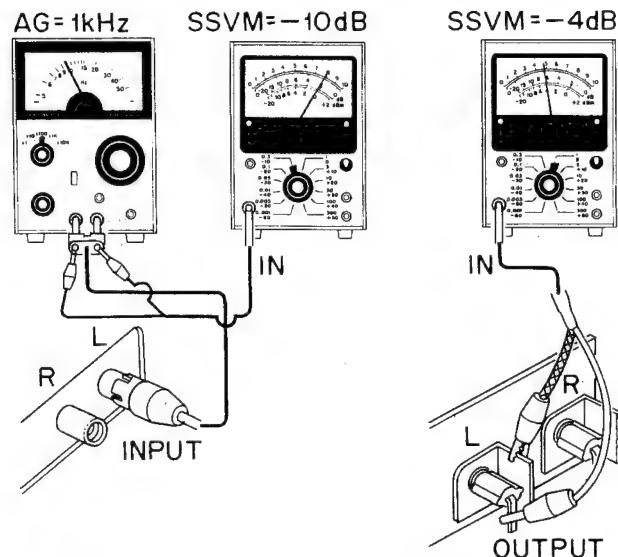
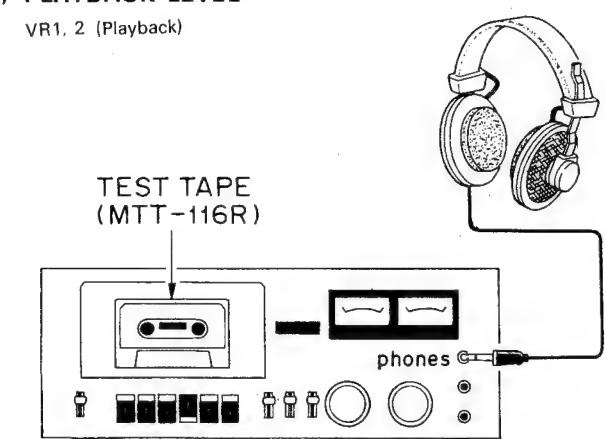
## SSVM=-10dB OSC



## ADJUSTMENT

### (7) PLAYBACK LEVEL

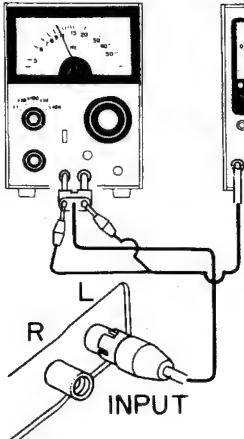
VR1, 2 (Playback)



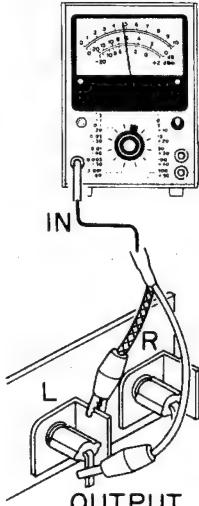
### (8) VU METER

VR7, 8 (Recording mode)

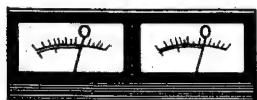
AG = 1kHz



SSVM = -4dB



VU meter



### (9) REC LEVEL

R5, 6 (Recording → Playback)

a) Recording

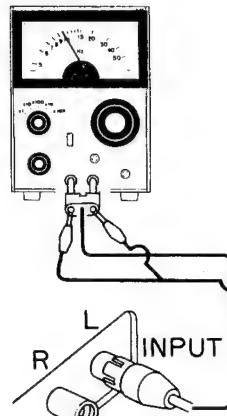
### (10) OVERALL FREQUENCY CHARACTERISTIC

VR9, 10 (Recording → Playback)

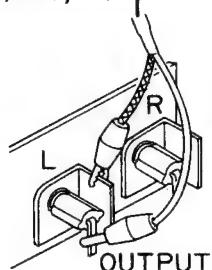
a) Recording

AG = 1kHz, 10kHz

SSVM = -30dB



b) Playback

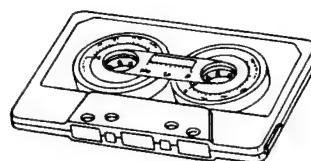
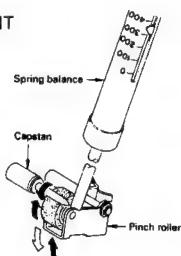


SSVM = -20dB

## MEASUREMENT

NO.	ALIGN	INPUT SIGNAL	CHECK POINTS	SETTING	MEASUREMENT	MEASURED VALUE	REMARKS
<b>MECHANISM SECTION</b>							
1.	TAPE SPEED DEVIATION	MTT-111 3 kHz	LINE OUT	Playback	Deviation (%) = $\frac{f-3 \text{ kHz}}{3 \text{ kHz}} \times 100$	$\pm 1.5\%$	
2.	TAPE SPEED VARIATION	MTT-111 3 kHz	LINE OUT	Playback	Measure the difference between the maximum and minimum tape speed deviation.	$\pm 1.3\%$	
3a.	WOW AND FLUTTER	MTT-111 3 kHz	LINE OUT	Playback	Measure at the beginning of, in the middle of, and at the end of tape running.	0.1%WRMS	
3b.	WOW AND FLUTTER (DIN)	UD-XL1 (T93-0013-05) 3.15 kHz	LINE OUT	Recording ↓ Playback	Measure at the beginning of, in the middle of, and at the end of tape running	$\pm 0.2\%$ WRMS	DIN weighting filter is required
4.	TIME FOR FAST FORWARD AND REWINDING	C-60	—	FF/REW	Measure the winding time necessary for FF and REW operation respectively.	95 sec. or less	
5.	TAPE COUNTER INDICATION	C-120	—	FF/REW PLAY/REC	Read out the counter indication from the beginning to the end of the tape, in FF, REW, PLAY and REC setting. (Prior to starting the tape, press the reset button of the counter to clear the figure [000])	900 $\pm 50$ count	
6.	TIME FOR AUTO-STOP OPERATION	—	—	FF/REW PLAY/REC	Measure the time from the moment the tape stops running until the auto-stopper functions	3 sec.	
7.	TAKE-UP TORQUE	Cassette type torque gauge, torque dial	—	PLAY	—	40~75 g.cm	
8.	FF TORQUE	Cassette type torque gauge, torque dial	—	FF	—	80~160 g.cm	
9.	REW TORQUE	Cassette type torque gauge, torque dial	—	REW	—	80~160 g.cm	
10.	PINCH ROLLER PRESSURE	—	—	PLAY	Press a spring balance to the pinch roller so that the pinch roller will separate from the capstan by 1~2 mm gap in PLAY mode. Then, allow the pinch roller to contact with the capstan quietly so that the pinch roller will start to turn. Then, read the indicating of the spring balance.	350 $\pm$ 50 g	See figure.
11.	BACK TENSION	Cassette type torque gauge	—	PLAY	—	1~5 g (Supply reel)	

PINCH ROLLER PRESSURE MEASUREMENT



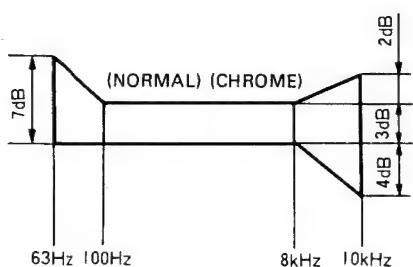
Cassette type torque gauge

## MEASUREMENT

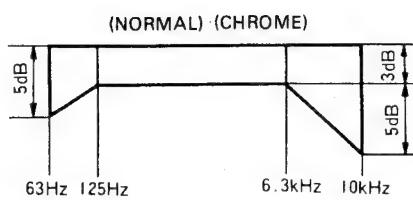
NO.	ALIGN	INPUT SIGNAL	CHECK POINTS	SETTING	MEASUREMENT	MEASURED VALUE	REMARKS
<b>AMP SECTION</b>							
1.	PLAYBACK LEVEL	MTT-116R 315 Hz, 0 dB	1) LINE OUT 2) Headphone jack	Playback	Check the output level	1) 0dBs±1.5dB 2) -20dBs ±3dB	
2.	PLAYBACK FREQUENCY CHARACTERISTICS	MTT-116U -20 dB	LINE OUT	Playback	Plot output levels at respective frequencies.		See Fig. 1.
3.	PLAYBACK SN RATIO	MTT-116U 315 Hz, 0 dB	LINE OUT	Playback	Check the ratio of the output in the playback state vs. that in the pause state.	47dB or more (with compensation) 43 dB or more (without compensation)	Weighting filter is required
4.	PLAYBACK OUTPUT LEVEL DEVIATION	MTT-116R 6.3 kHz -10 dB	LINE OUT	Playback	Check the deviation in the output level. For 60 sections or more.	3 dB or less	
5.	INPUT SENSITIVITY	1k Hz	LINE IN LINE OUT	Recording mode (REC VOL: Max)	Measure the input level to obtain the output level - 4 dBs.	MIC: -72dBs ±3 dB LINE: -20 dBs ±3 dB REC/PLAY: -34 dBs ±3 dB	
6.	OVERALL FREQUENCY CHARACTERISTIC (1) WITH DOLBY NR OFF	-20 dB below the normal recording level input (-10 dBs) at each frequency, LINE IN	LINE OUT	Normal recording condition → playback (DOLBY OFF, input signal -20 dB below the normal recording level input, equalizer in 2 stages)	Plot output levels at respective frequencies		Channel balance should be made within 4 dB (See Fig. 2)
7.	OVERALL FREQUENCY CHARACTERISTIC (2) WITH DOLBY NR ON	-20 dB below the normal recording level input at each frequency, LINE IN	LINE OUT	Normal recording condition → playback (DOLBY ON, input signal -20 dB below the normal recording level input, equalizer in 2 stages)	Plot output levels at respective frequencies.		See Fig. 3.
8.	ERASING RATE	+6 dB above the normal recording level input at 1 kHz, LINE IN	LINE OUT	Recording → Playback → Erasing	Measure the output level where recording and playback have been performed and the one where the tape has been erased, using a band-pass filter. Express the resultant level difference in dB.	60 dB or more	
9.	DISTORTION	Normal recording level input 1 kHz, LINE IN	LINE OUT	Recording → Playback	Measure the total harmonic distortion factor in the playback output	NORMAL 3.0% or less CHROME 3.0% or less	
10.	OVERALL SN RATIO	Normal recording level input at 1 kHz, LINE IN and no signal	LINE OUT	Recording → Playback	Check the ratio of the playback level at 1 kHz vs. the noise output level in no-signal tape.	DOLBY NR OFF: 47 dB or more (with compensation) 41 dB or more (without compensation) DOLBY NR ON-51 dB or more (with compensation) 41 dB or more (without compensation)	Weighting filter is required. Channel balance should be made within 5 dB

## MEASUREMENT

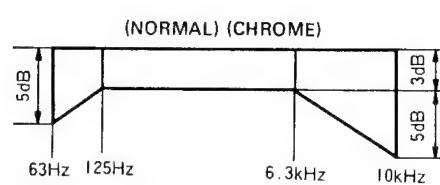
NO.	ALIGN	INPUT SIGNAL	CHECK POINTS	SETTING	MEASUREMENT	MEASURED VALUE	REMARKS
11.	CHANNEL SEPARATION	One channel: Normal recording level input at 100 Hz Another channel: No signal, LINE IN	LINE OUT	Recording→Playback	Measure the playback level in the recorded track and the crosstalk output level in the unrecorded track, using a band-pass filter. Express the resultant level difference in dB.	30 dB or more	
12.	CROSS TALK BETWEEN TRACKS	Normal recording level input at 100 Hz. LINE IN	LINE OUT	Recording→Playback	Measure the playback level in the recorded track and the crosstalk output level in the unrecorded track of the same tape section using a band-pass filter. Express the resultant level difference in dB.	30 dB or more	



Standard: Playback Frequency  
Characteristic (Fig. 1)

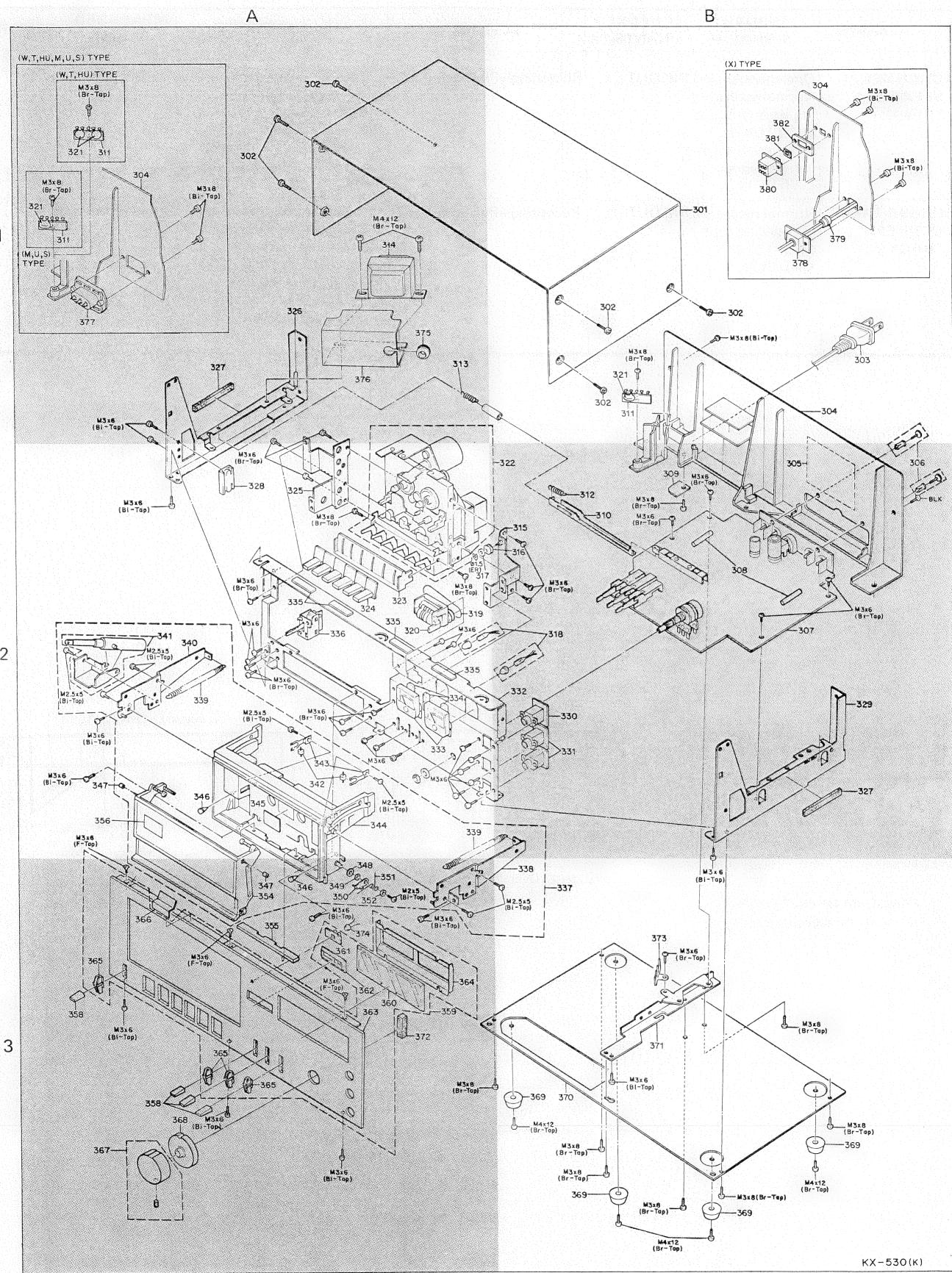


Standard: Overall Frequency  
Characteristic (1) (Fig. 2)

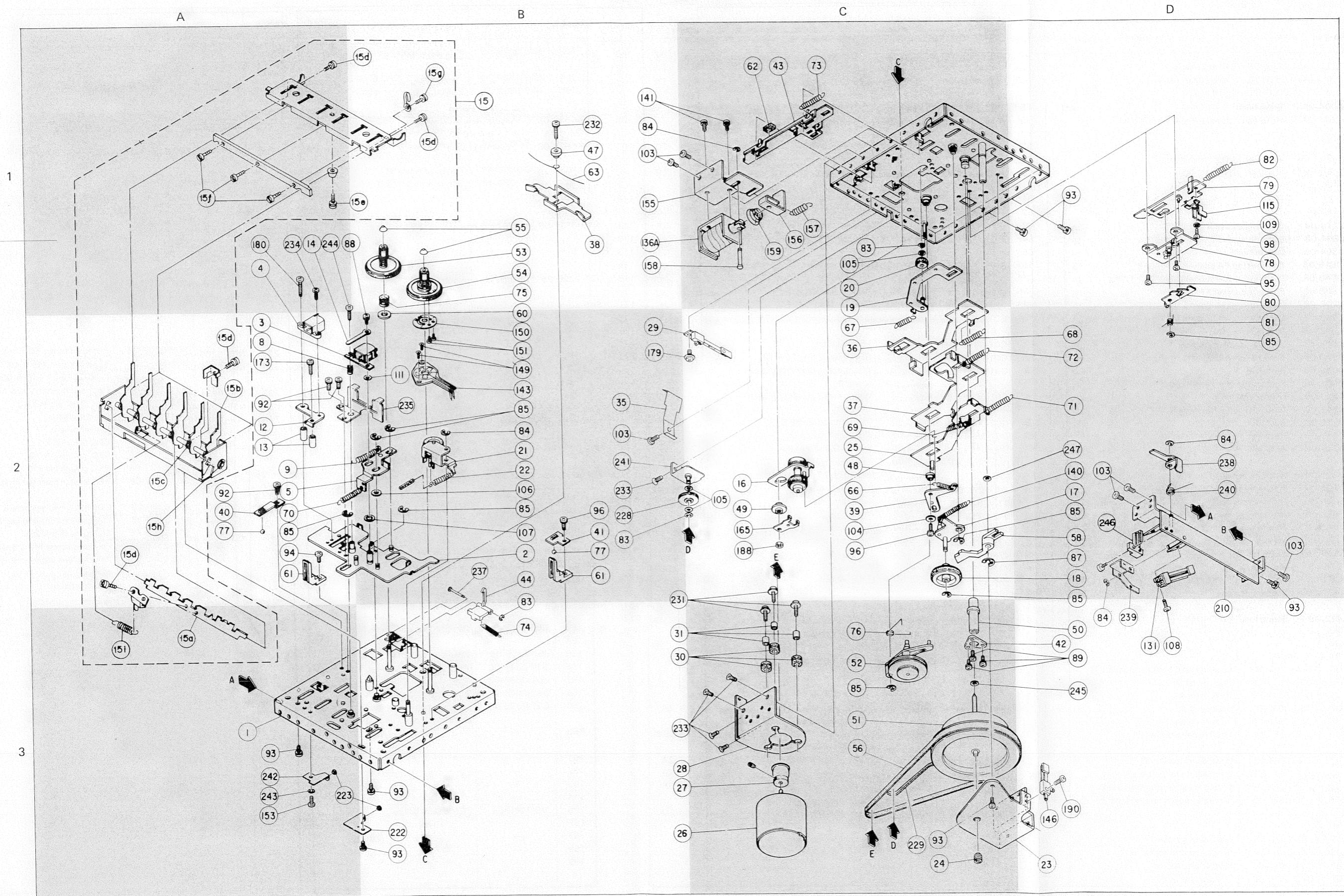


Standard: Overall Frequency  
Characteristic (2) (Fig. 3)

## EXPLODED VIEW



**EXPLODED VIEW  
(D40-0445-05)**



EXPLODED VIEW PARTS LIST  
(D40-0445-05)

☆: New Parts, ×: No Stock

Fig. No.	Parts No.	Description	Remarks
1	A11-0328-08	Chassis ass'y	☆ × 3A
2	A11-0329-08	Head panel ass'y	☆ × 2B
3	T34-0007-05	R/P head	☆ 2A
4	T32-0004-05	Erase head	1A
5	D10-0540-08	Head panel pushing plate C	☆ 2A
6	—	—	—
7	—	—	—
8	G01-0682-08	R/P head spring B	☆ 2A
9	G01-0683-08	Link spring C	☆ 2A
10	—	—	—
11	—	—	—
12	J21-2279-08	Erase head base B	☆ 2A
13	J32-0504-08	Erase head stud E	☆ 2A
14	E23-0304-08	Lug terminal J	☆ 1A
15	A13-0516-08	<b>Pushbutton FA ass'y</b>	☆ 1B
15a	D10-0549-08	Pushbutton operational plate	☆ 3A
15b	D10-0538-08	Pushbutton lever FT	☆ 2A
15c	G01-0700-08	Pushbutton lever spring H	☆ 2A
15d	N09-0203-08	SEMUS screw M2.6×4	1A,1B,2A
15e	N09-0202-08	SEMUS screw M2.6×6	1A
15f	N30-2606-46	SEMUS screw M2.6×6	1A
15g	N09-0590-08	SEMUS screw M2×4	1B
15h	N24-3030-60	E-ring 3φ	2A
15i	G01-0701-08	Pushbutton operational spring	☆ 3A
16	D14-0210-08	FF idler arm ass'y	☆ 2C
17	D10-0548-08	Auto idler supporter ass'y B	☆ 2D
18	D14-0212-08	Auto idler	☆ 2D
19	D10-0541-08	REW arm BB ass'y	☆ 1C
20	D14-0213-08	REW idler B	☆ 1C
21	D14-0211-08	Pinch roller ass'y	☆ 2B
22	G01-0704-08	Pinch roller spring F	☆ 2B
23	J21-2289-18	Flywheel support	☆ × 3D
24	N09-0822-08	Adjusting screw	☆ 3C
25	D10-0542-08	FF arm C ass'y	☆ 2C
26	T42-0105-05	Motor	☆ 3B
27	D15-0510-18	Motor pulley	☆ × 3B
28	J21-2275-08	Motor bracket	—
29	S46-0307-08	Play switch S7 LS1139TY	—
30	G13-0431-08	Rubber cushion	☆ 3B
31	J31-0422-08	Spring tube	☆ 3B
32	—	—	—
33	—	—	—
34	—	—	—
35	J19-1262-18	Cassette hold back spring plate Q	☆ 2B
36	D30-0004-08	Brake lever D	☆ 2C
37	D10-0543-08	REW lever A	☆ 2C
38	D30-0003-08	Brake arm D	☆ 1B
39	D10-0545-08	FF tension arm	☆ 2C
40	J19-1267-08	Head panel retainer A	☆ 2A
41	J19-1268-08	Head panel retainer D	☆ 2B
42	J21-2282-08	Flywheel metal support A	☆ 3D
43	D10-0544-08	Wrong erase preventing lever D	☆ 1C
44	D10-0539-08	Wrong erase preventing latch F	☆ 2B
45	—	—	—
46	—	—	—
47	J31-0423-08	Brake arm spacer B	☆ 1B
48	J31-0424-08	FF tension arm spacer B	☆ 2C
49	D21-0648-08	FF idler arm spacer	☆ 2C
50	D23-0515-08	Flywheel metal F	☆ 3D

EXPLODED VIEW PARTS LIST  
(D40-0445-05)

Fig. No.	Parts No.	Description	Remarks	Fig. No.	Parts No.	Description	Remarks	Fig. No.	Parts No.	Description	Remarks
51	D01-0306-08	Flywheel	☆ 3C	103	N09-0828-08	Pan head tapping screw M3×5	☆ 1B,2B	171	—	—	—
52	D19-0213-08	Slip clutch ass'y D	☆ 3C	104	N15-1026-16	Flat washer 2.8×7.5×0.5	2D	172	—	—	—
53	D03-0010-08	Supply reel ass'y K	☆ 1B	105	N19-0539-08	Polyethylene slider washer 2.1×4.0×0.13	2C	173	N09-0823-08	SEMUS screw M2×13	☆ 2A
54	D03-0009-08	Take-up reel ass'y Q	☆ 1B	106	N19-0537-08	Polyethylene slider washer 3.1×5.4×0.13	2B	174	—	—	—
55	B09-0205-08	Reel cap A	☆ 1B	107	N19-0538-08	Polyethylene slider washer 4.1×6.5×0.13	2B	177	—	—	—
56	D16-0214-08	Flat belt 84φ×5×0.4t	☆ 3C	108	N30-2006-46	Pan head screw M2×6	3D	179	N09-0825-08	Pan head screw M2.6×4.5 w/flat washer	☆ 2B
57	—	—	—	109	N16-0020-46	Spring washer M2.0	1D	180	N35-2015-46	Binding screw M2×15	1A
58	D10-0546-08	Auto lever A	☆ 2D	110	—	—	—	188	N10-2026-46	Nut M2.6	2C
59	—	—	—	111	N19-0536-08	R/P head spacer 5φ×2.3φ×0.2t	☆ 2B	189	—	—	—
60	N19-0543-08	Polyethylene slider washer	☆ 1B	112	—	—	—	190	N30-2608-46	Pan head screw M2.6×8	3D
61	J90-0303-08	Cassette guide E	☆ 2A,2B	113	—	—	—	210	J21-2280-18	Switch support ass'y	☆ 3D
62	G13-0432-08	cushion A	☆ 1C	114	—	—	—	222	J21-2284-08	Mechanism cushion base	☆ 3B
63	G01-0684-08	Brake arm spring C	☆ 1B	115	J21-2290-08	Pause arm support F	☆ 1D	223	G13-0433-08	Rubber cushion A	☆ 3A
64	—	—	—	131	S46-2304-08	Muting switch S9	☆ 3D	228	D15-0511-08	Pulley (for clutch drive)	2B
65	—	—	—	132	—	—	—	229	D16-0215-08	Clutch drive belt 1.2×61	☆ 3C
66	G01-0685-08	FF idler spring	☆ 2C	133	—	—	—	230	—	—	—
67	G01-0686-08	REW arm spring	☆ 2C	134	—	—	—	231	N09-0200-08	Pan head screw M2.6×7 FW	2B
68	G01-0687-08	Brake lever spring E	☆ 2C	135	—	—	—	232	N09-0579-08	SEMUS screw M2.6×12 (N30-2612-11+N16-0026-46)	1B
69	G01-0688-08	REW tension spring	☆ 2C	136A	T94-0056-08	Solenoid (B) 13V40	☆ 1B	233	N09-0834-08	Flat head tapping screw M3×6	☆ 2B,3B
70	G01-0690-08	Head panel spring 70=72	☆ 2A	137	—	—	—	234	N35-2005-46	Binding screw M2×5	1A
71	G01-0689-08	FF arm spring	☆ 2D	138	—	—	—	235	F09-0303-18	Head protector	☆ 2B
72	G01-0690-08	REW lever spring 70=72	☆ 2D	139	—	—	—	236	E23-0305-08	Lug terminal K	☆ 3D
73	G01-0691-08	Wrong erase preventing latch spring B	☆ 1C	140	G01-0695-08	Auto idler supporter spring B	☆ 2D	237	D21-0647-08	REC. lever shaft	☆ 2B
74	G01-0692-08	Wrong erase preventing latch spring D	☆ 3B	141	N09-0227-08	SEMUS screw M3×4 (N30-3004+N16-0030-46)	1B	238	D10-0536-18	REC. switch lever B	☆ 2D
75	G01-0693-08	Back tension spring B	☆ 1B	142	J25-2353-08	Sensor switch P.C. board	☆ 2B	239	D10-0537-08	REC. switch lever C	☆ 3D
76	G01-0694-08	Slip clutch spring D	☆ 3C	143	—	—	—	240	G01-0702-08	REC. switch lever spring A	☆ 2D
77	D90-0102-08	Steel ball 2φ	☆ 2A,2B	144	—	—	—	241	J09-0306-08	Clutch drive pulley base B	☆ 2B
78	J19-1271-08	<b>Pause ass'y H (includes 78~81, 115)</b>	☆	145	—	—	—	242	J21-2272-08	Mechanism cushion base B	☆ 3A
79	D10-0522-08	Pause arm ass'y	☆ 1D	146	S46-1306-08	Leaf switch (for pause cancelling S8)	☆ 3D	243	N16-0026-46	Spring washer M2.6	3A
80	D12-0213-08	Pause cam B	☆ 1D	147	—	—	—	244	N09-0830-08	Pan head screw M2×5 (Thread)	☆ 1A
81	G01-0703-08	Pause cam spring A	☆ 2D	148	—	—	—	245	N19-0540-08	Polyethylene slider washer φ2.5×0.5t	☆ 3D
82	G01-0696-08	Pause arm spring	☆ 1D	149	N09-0824-08	Flat head screw M2×2.5	2B	246	S46-1310-08	REC. switch S6	☆ 2D
83	N24-3015-60	E ring φ1.5	1C,2B	150	G02-0314-08	Slider A	☆ 2B	247	N19-0548-08	Washer	2C
84	N24-3020-60	E ring φ2.0	1B,2B,2D,3D	151	N09-0826-08	Pan head screw M1.7×1.8	2B				
85	N24-3025-60	E ring φ2.5	2A,2B,2D,3C	152	—	—	—				
86	—	—	—	153	N09-0827-08	Pan head tapping screw M2.6×5	3A				
87	N24-3040-60	E ring φ4.0	2D	154	—	—	—				

## EXPLODED VIEW PARTS LIST

- : Refer to Destinations' Parts List
- ☆ : New Parts
- × : No Stock

Fig. No.	Parts No.	Description	Remarks
301	A01-0604-01	Case	☆ 1B
302	N09-0831-04	Binding head tap tight screw	1A,1B
303	●	Power cord	1B
304	●	Rear panel	☆ 1B
305	B42-1351-00	Adjustment sheet	☆ 2B
306	N29-0211-05	Push rivet	2B
307	●	REC/PLAY PC board ass'y	☆ 2B
308	●	Fuse	2B
309	●	Power cord holder	× 2B
310	D19-0212-04	REC slider	× 2B
311	E22-0415-05	Lug type terminal strips (2-0-2)	☆ × 1B
312	G01-0680-14	Coil spring	2B
313	G01-0706-04	Coil spring B	1B
314	●	Power transformer	☆ 1A
315	J21-2276-04	Bracket (R) ass'y	☆ × 2B
316	D15-0509-04	Interconnecting pulley	2B
317	N19-0524-04	Polyethylene slider washer	2A
318	●	Lamp 8V 0.12A	☆ 2B
319	D16-0212-05	Counter belt	2A
320	B35-0205-05	Tape counter	2A
321	●	Polyester capacitor	1B
322	<b>D40-0445-05</b>	<b>Mechanism ass'y</b>	2B
323	F07-0619-03	Frame cover	2A
324	K29-0648-03	Knob	2A
325	J21-2270-04	Bracket (L)	× 2A
326	A13-0508-12	Frame (L)	☆ × 1A
327	G13-0422-04	Cushion (A)	1A,2B
328	F07-0621-14	Switch cover ass'y	2A
329	A13-0507-12	Frame (R)	☆ × 2B
330	E11-0303-05	Headphone jack	☆ 2B
331	E11-0302-05	Mic jack	☆ 2B
332	A22-0601-21	Sub panel ass'y	☆ × 2B
333	B31-0503-05	VU meter	☆ 2A
334	G13-0418-04	VU meter cushion	☆ 2A
335	G13-0439-04	Cushion (D)	2A
336	●	Power switch	2A
337	<b>B07-0520-22</b>	<b>Housing ass'y (includes 338~354)</b>	☆ 3B
338	J21-2257-04	Housing holder ass'y (R)	3B
339	G01-0643-04	Coil spring (A)	2A
340	J21-2256-04	Housing holder ass'y (L)	2A
341	D39-0082-04	Damper ass'y	2A
342	D14-0208-14	Roller (A)	2A
343	G02-0308-14	Plate spring (A)	2A
344	B07-0514-12	Housing	☆ × 2A
345	A21-0645-04	Housing dress board	☆ 2A
346	J42-0311-04	Rubber bushing	2A,3A
347	D14-0207-04	Roller (B)	2A,3A
348	N19-0521-04	Rubber washer	3A
349	N19-0520-04	Polyethylene slider washer	3A
350	D10-0488-04	Lock lever ass'y (A)	3A
351	G01-0641-04	Torsion spring	3A
352	N19-0517-04	Flat washer	3A
353	—	—	—
354	A53-0211-03	Cassette lid	3A
355	F07-0614-14	Housing cover	3A
356	B42-1352-04	Push seal	2A

357	—	—	—
358	K27-0063-04	Knob (lever)	3A
359	●	Panel ass'y (includes 360~365)	☆ 3A
360	B10-0502-03	Front glass	☆ 3A
361	J19-0509-04	LED holder	3A
362	B07-0512-04	Counter window	3A
363	●	Panel	☆ × 3A
364	B03-0409-03	VU meter dress panel	☆ × 3A
365	B07-0221-04	Escutcheon	☆ 3A
366	H12-0335-14	Cassette lid holder	3A
367	K21-0606-14	VR knob (inside)	☆ 3A
368	K23-0623-04	VR knob (outside)	☆ 3A
369	J02-0325-15	Foot	☆ 3B
370	A40-0522-02	Bottom plate	☆ × 3B
371	A13-0509-13	PC board frame	☆ × 3B
372	G13-0438-04	Cushion (C)	3A
373	E22-0216-05	Lug type terminal strips (1L4P)	3B
374	B38-0204-05	LED ass'y	3A
375	J42-0316-05	Bushing	× 1A
376	F10-1016-04	Shielding plate	× 1A
377	●	3P inlet (with power voltage selector)	
378	●	Power cord bushing holder	
379	●	Power cord bushing	
380	●	Power voltage selector	
381	●	Spacer	
382	●	Switch stopper	

Fig. No.	Parts No.
M3 × 8 (Bi-Tap)	N89-3008-45
M3 × 6 (Br-Tap)	N87-3006-46
M3 × 8 (Br-Tap)	N87-3008-46
M4 × 12 (Br-Tap)	N87-4012-46
M3 × 6	N30-3006-46
M2.5 × 5 (Bi-Tap)	N89-2505-46
M3 × 6 (Bi-Tap)	N89-3006-46
M2.5 × 5 (Bi-Tap)	N89-2505-46
M2 × 5 (Bi-Tap)	N89-2005-46
M3 × 6 (F-Tap)	N88-3006-46

## DESTINATIONS' PARTS LIST

☆ : New parts, × : Not available

Ref. No.	U.S.A. (K)	Canada (P)	PX (U)	Australia (X)	Europe (W)	England (T)	South Africa (S)	Other Area (M)	KX-503 (Hu)	Description
303	E30-0181-05	E30-0181-05	E30-1305-15	E30-0185-05	E30-1329-05☆	E30-1328-05	E30-1305-15	E30-1329-05	E30-1329-05	Power cord
304	A23-1219-05	A23-1219-05	A23-1220-05	A23-1222-05	A23-1220-05	A23-1220-05	A23-1220-05	A23-1220-05	A23-1220-05	Rear panel☆
307	X28-1290-01	X28-1290-01	X28-1290-01	X28-1290-01	X28-1290-02	X28-1290-02	X28-1290-01	X28-1290-01	X28-1290-02	REC/PLAY PC board ass'y☆
	or			or	or	or	or	or	or	
	X28-1290-03	X28-1290-03	X28-1290-03	X28-1290-03	X28-1290-04	X28-1290-04	X28-1290-03	X28-1290-03	X28-1290-04	
308	F05-8018-05	F05-8018-05	F05-8015-05	F05-8015-05	F1: F05-6312-05	F1: F05-6312-05	F05-8015-05	F05-8015-05	F1: F05-6312-05	Fuse
	J19-1272-04	J19-1272-04	—	—	—	—	—	—	F2: F05-8012-05	
314	L01-6161-15	L01-6161-15	L01-6164-05	L01-6167-05	L01-6164-05	L01-6167-05	L01-6167-05	L01-6164-05	L01-6164-05	Power cord holder ×
318	B30-0714-05	B30-0714-05	B30-0710-05	B30-0710-05	B30-0710-05	B30-0710-05	B30-0710-05	B30-0710-05	B30-0710-05	Power transformer
321	C90-0145-05	C91-0025-05	C91-0308-05	CK45E3D103PMU	CK45E3D103PMU	C91-0308-05	C91-0308-05	C91-0308-05	CK45E3D103PMU	Lamp 8V 0.12A
336	S33-1303-05	S33-1303-05	S33-1302-05	S33-1302-05	S33-2304-05☆	S33-2304-05☆	S33-1302-05	S33-1302-05	S33-2304-05	Capacitor
359	A20-1929-02	A20-1929-02	A20-1929-02	A20-1929-02	A20-1929-02	A20-1929-02	A20-1929-02	A20-1929-02	A20-1929-02	Power switch
360	A20-1930-02	A20-1930-02	A20-1930-02	A20-1930-02	A20-1930-02	A20-1930-02	A20-1930-02	A20-1930-02	A20-1945-02	Panel ass'y☆
377	—	—	E03-0102-05	E03-0102-05	E03-0102-05	E03-0102-05	E03-0102-05	E03-0102-05	E03-0102-05	Panel ☆ ×
378	—	—	—	J19-1278-04	—	—	—	—	—	3P inlet
379	—	—	—	J41-0024-15	—	—	—	—	—	Power cord bushing holder☆
380	—	—	—	S31-2001-05	—	—	—	—	—	Power cord bushing
381	—	—	—	J30-0407-04	—	—	—	—	—	Power voltage selector
382	—	—	—	D32-0075-04	—	—	—	—	—	Spacer☆
										Switch stopper
—	B46-0061-10	B46-0055-20	B46-0062-10	B46-0064-00	—	B46-0060-00	—	—	B46-0062-10	Warranty card
—	—	—	B46-0063-00	—	—	—	—	—	—	Warranty card
—	B50-2277-00	B50-2278-00	B50-2277-00	B50-2277-00	B50-2279-00	B50-2277-00	B50-2278-00	B50-2287-00	B50-2287-00	Instruction manual☆
					—	—	—	—	—	Kenwood service stations' list
—	H01-2288-04	H01-2290-04	H01-2288-04	H01-2289-04	H01-2288-04	H01-2288-04	H01-2288-04	H01-2288-04	H01-2301-04	Carton box☆
—	H20-0441-04☆	H20-0441-04☆	H20-0441-04☆	H20-0441-04☆	H20-0441-04☆	H20-0441-04☆	H20-0441-04☆	H20-0441-04	H20-0341-04	Polyethylene cover
—	—	—	—	—	—	—	—	—	—	Anti-rust paper

## PARTS LIST

## TOTAL

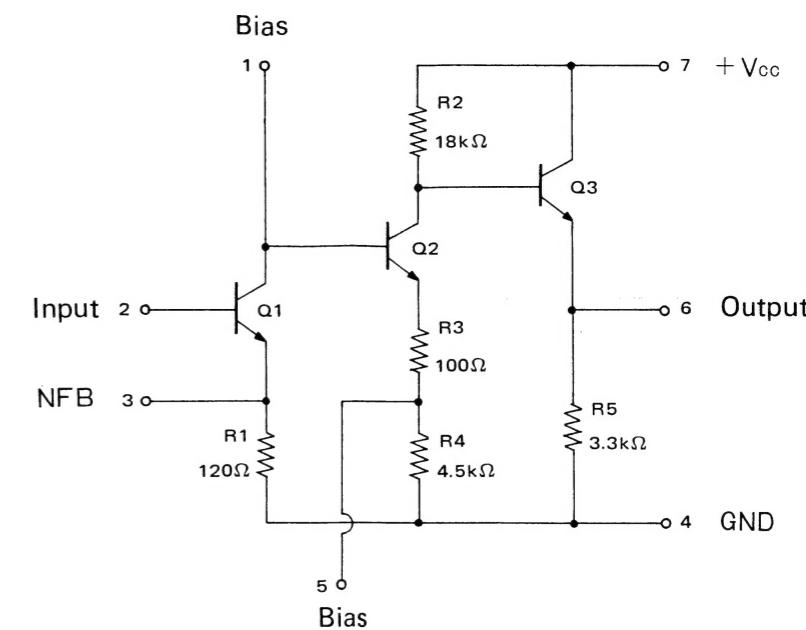
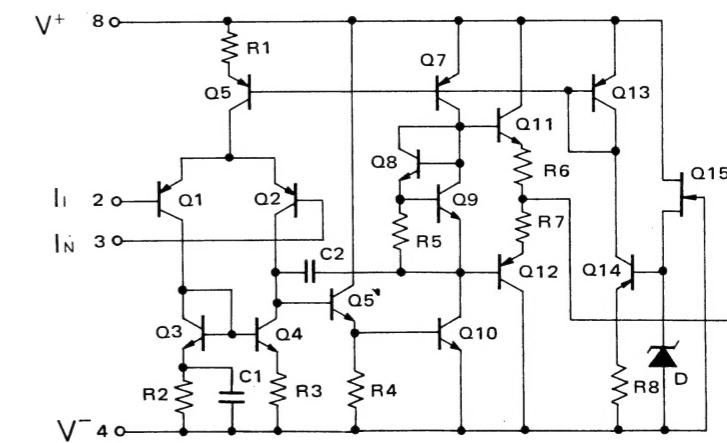
☆: New Parts

Ref. No.	Parts No.	Description	Re-marks
—	B42-0009-04	Passed sticker	
—	E30-0541-05	Audio cord	
—	H10-2337-02	Polystyrene foamed fixture (L)	☆
—	H10-2238-02	Polystyrene foamed fixture (R)	☆
—	H25-0078-04	Polyethylene bag	
—	W01-0301-05	Head cleaning bar	

## REC/PLAY/OSC (X28-1290-01~04)

Ref. No.	Parts No.	Description	Re-marks
CAPACITOR			
C1.2	CC45SL1H221J	Ceramic 220pF $\pm 5\%$	
C3.4	CE04W1A330	Electrolytic 33 $\mu$ F 10WV	
C5.6	CE04AW1E100MCC	Electrolytic 10 $\mu$ F 25WV	
C7.8	CC45SL1H470K	Ceramic 47pF $\pm 10\%$	
C9.10	CC45SL1H151K	Ceramic 150pF $\pm 10\%$	
C11.12	CE04W1E4R7	Electrolytic 4.7 $\mu$ F 25WV	
C13.14	CQ92M1H153J	Mylar 0.015 $\mu$ F $\pm 5\%$	
C15.16	CE04W1C220	Electrolytic 22 $\mu$ F 16WV	
C17.18	CE04W1C101	Electrolytic 100 $\mu$ F 16WV	
C19.20	CE04W1H010	Electrolytic 1 $\mu$ F 50WV	
C21.22	CE04AW1HR33	Electrolytic 0.33 $\mu$ F 50WV	
C23.24	CE04AW1H0R1	Electrolytic 0.1 $\mu$ F 50WV	
C25.26	CE04W1C100	Electrolytic 10 $\mu$ F 16WV	
C27.28	CQ92M1H473J	Mylar 0.047 $\mu$ F $\pm 5\%$	
C29.30	CE04W1C100	Electrolytic 10 $\mu$ F 16WV	
C31.32	CQ92M1H472J	Mylar 0.0047 $\mu$ F $\pm 5\%$	
C33.34	CQ92M1H273J	Mylar 0.027 $\mu$ F $\pm 5\%$	
C35.36	CQ92M1H562J	Mylar 0.0056 $\mu$ F $\pm 5\%$	
C37.38	CE04W1C101	Electrolytic 100 $\mu$ F 16WV	
C39.40	CE04W1C100	Electrolytic 10 $\mu$ F 16WV	
C41.42	CE04W1C100	Electrolytic 10 $\mu$ F 16WV (-01.02)	
	CE04W1H010	Electrolytic 1 $\mu$ F 50WV (-03.04)	
C43.44	CQ92M1H823K	Mylar 0.082 $\mu$ F $\pm 10\%$	
C45.46	CE04W1C100	Electrolytic 10 $\mu$ F 16WV	
C47.48	CQ92M1H273J	Mylar 0.027 $\mu$ F $\pm 5\%$	
C49.50	CQ92M1H223J	Mylar 0.022 $\mu$ F $\pm 5\%$	
C51.52	CQ92M1H102J	Mylar 0.001 $\mu$ F $\pm 5\%$	
C53.54	CE04AW1E100MCC	Electrolytic 10 $\mu$ F 25WV	
C55.56	CE04W1C100	Electrolytic 10 $\mu$ F 16WV	
C57.58	CQ92M1H152J	Mylar 0.0015 $\mu$ F $\pm 5\%$	
C59.60	CE04W1C100	Electrolytic 10 $\mu$ F 16WV (-01.02)	
	CE04W1E3R3	Electrolytic 3.3 $\mu$ F 25WV (-3.04)	
C61.62	CE04W1C330	Electrolytic 33 $\mu$ F 16WV	
C63.64	CC45SL1H181K	Ceramic 180pF $\pm 10\%$	
C65.66	CE04W1C220	Electrolytic 22 $\mu$ F 16WV	
C67.68	CE04AW1C220MCC	Electrolytic 22 $\mu$ F 16WV	
C69.70	CE04W1A220	Electrolytic 22 $\mu$ F 10WV	
C71	CE04W1C221	Electrolytic 220 $\mu$ F 16WV	
C73.74	CC45SL1H331K	Ceramic 330pF $\pm 10\%$	
C75.76	CC45SL1H680K	Ceramic 68pF $\pm 10\%$	
C77	CQ09SB472J	Polystyrene 0.0047 $\mu$ F $\pm 5\%$	
C78	CQ92M1H822J	Mylar 0.0082 $\mu$ F $\pm 5\%$	
C79	CQ92M1H392J	Mylar 0.0039 $\mu$ F $\pm 5\%$	
C80	CE04W1C100	Electrolytic 10 $\mu$ F 16WV	

## IC EQUIVALENT CIRCUIT/SEMICONDUCTOR SUBSTITUTIONS

 $\mu$ PC566H3 $\mu$ PC4557C (Half)

## SEMICONDUCTOR SUBSTITUTIONS

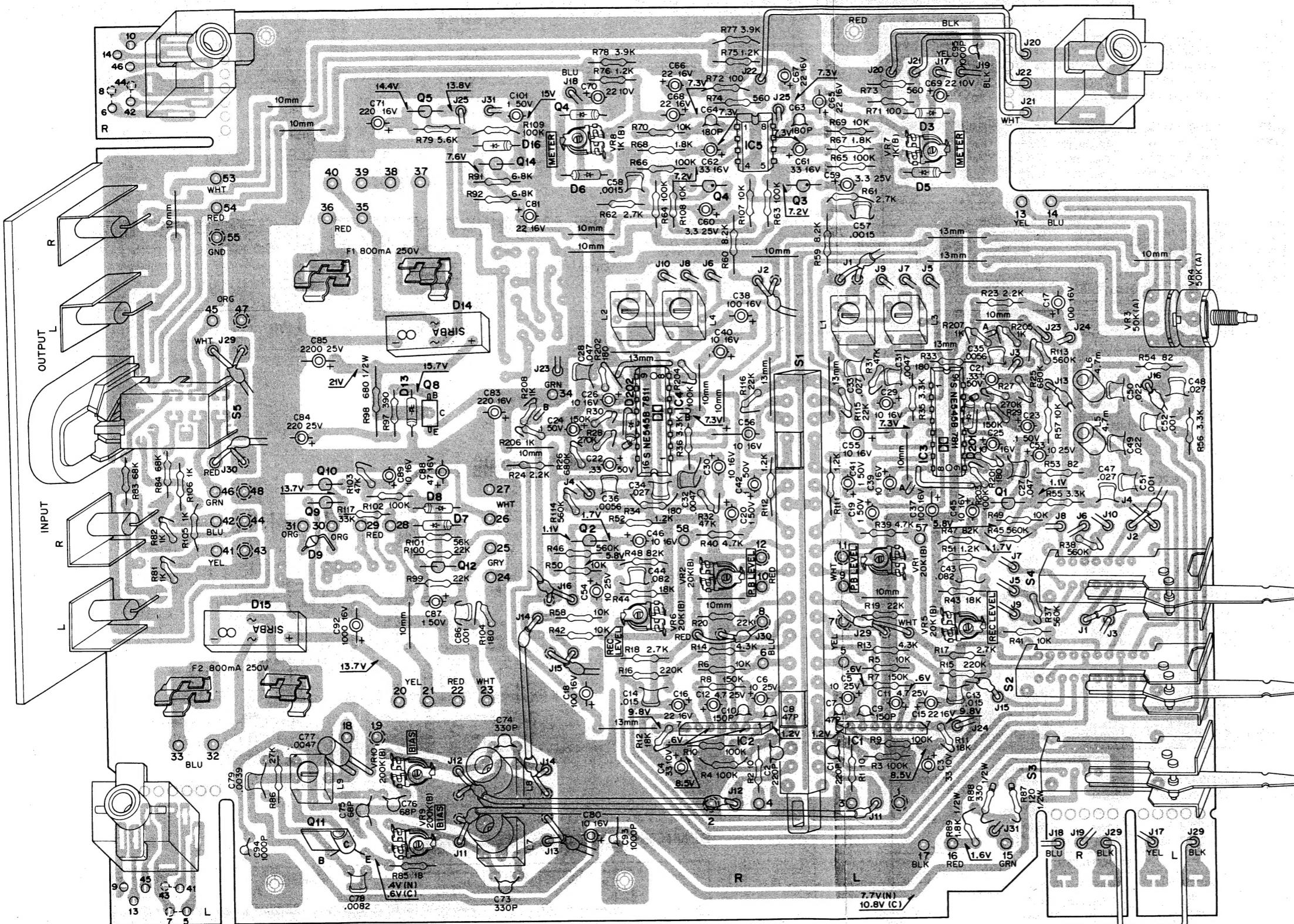
Ref. No.	Semiconductor	Substitutions
Q1.2	2SC945 (P)	2SC1000 (G, R), 2SC1775 (D), 2SC1213A (D), 2SC1327 (R, S)
Q3.4	2SK105 (F, H)	2SK68 (L, M), 2SK30A (Y, GR), 2SK68A (L, M)
Q5~7, 10, 12	2SC828 (R)	2SC828A (R), 2SC733 (Y, GR), 2SC945 (P, Q, R), 2SC734 (Y)
Q8	2SC2209 (Q) or 2SC1419 (C)	2SC1061, 2SC789, 2SC1826, 2SC1827, 2SD234, 2SD526
Q9	2SA684 (Q, R)	2SB616, 2SB617
Q11	2SC1384 (Q, R)	2SD600K (E, F), 2SD330 (E, F)
Q14	2SA733 (P, Q)	2SA561 (GR, Y), 2SA673A (C, D), 2SA564 (Q, R)

KX-530

KX-530 KX-530

## PC BOARD/SCHEMATIC MODIFICATIONS

X28-1290-03 COMPONENT SIDE

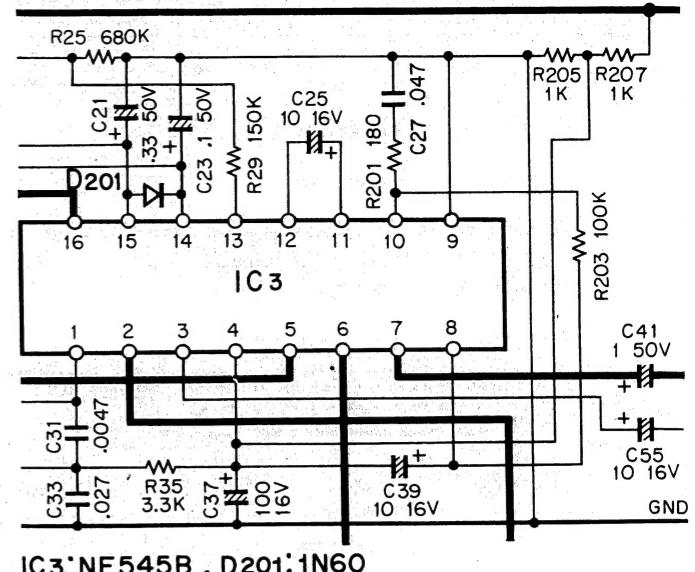


Q1.2 : 2SC945(P)  
 Q3.4 : 2SK105(F,H)  
 Q5,10,12 : 2SC828(R)  
 Q8 : 2SC2209(Q) or 2SC1419(C)  
 Q9 : 2SA684(Q,R)  
 Q11 : 2SC1384(Q,R)

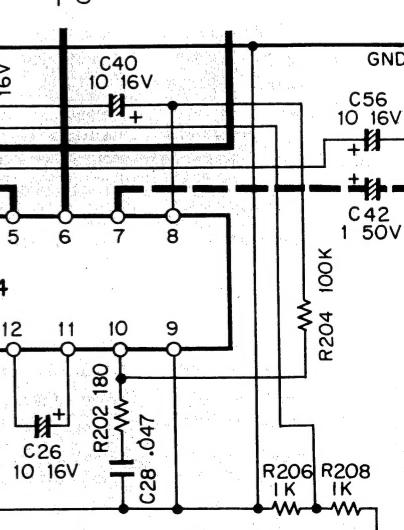
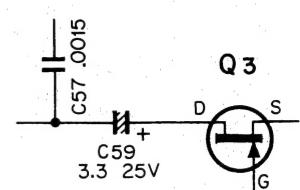
Q14 : 2SA733(P,Q)  
 IC1,2 :  $\mu$ PC566H3(L,M)  
 \*IC3,4 : LM1011-01,-02  
 IC5 :  $\mu$ PC4557C  
 D3~6 : 1N60  
 D7,8,16 : 1S2076  
 D9 : V06B  
 D15 : RD15EC  
 D14,15 : S1RBA10  
 D17 : GD-4-207RD  
 D201,202 : 1N60(-03,-04)  
 \*IC3,4 : NE545B

Emitter ————— Base  
 Collector ————— Gate  
 Source ————— Drain

MODIFICATIONS from X28-1290-01, 02 to  
X28-129003, 04



IC3:NE545B, D201:1N60

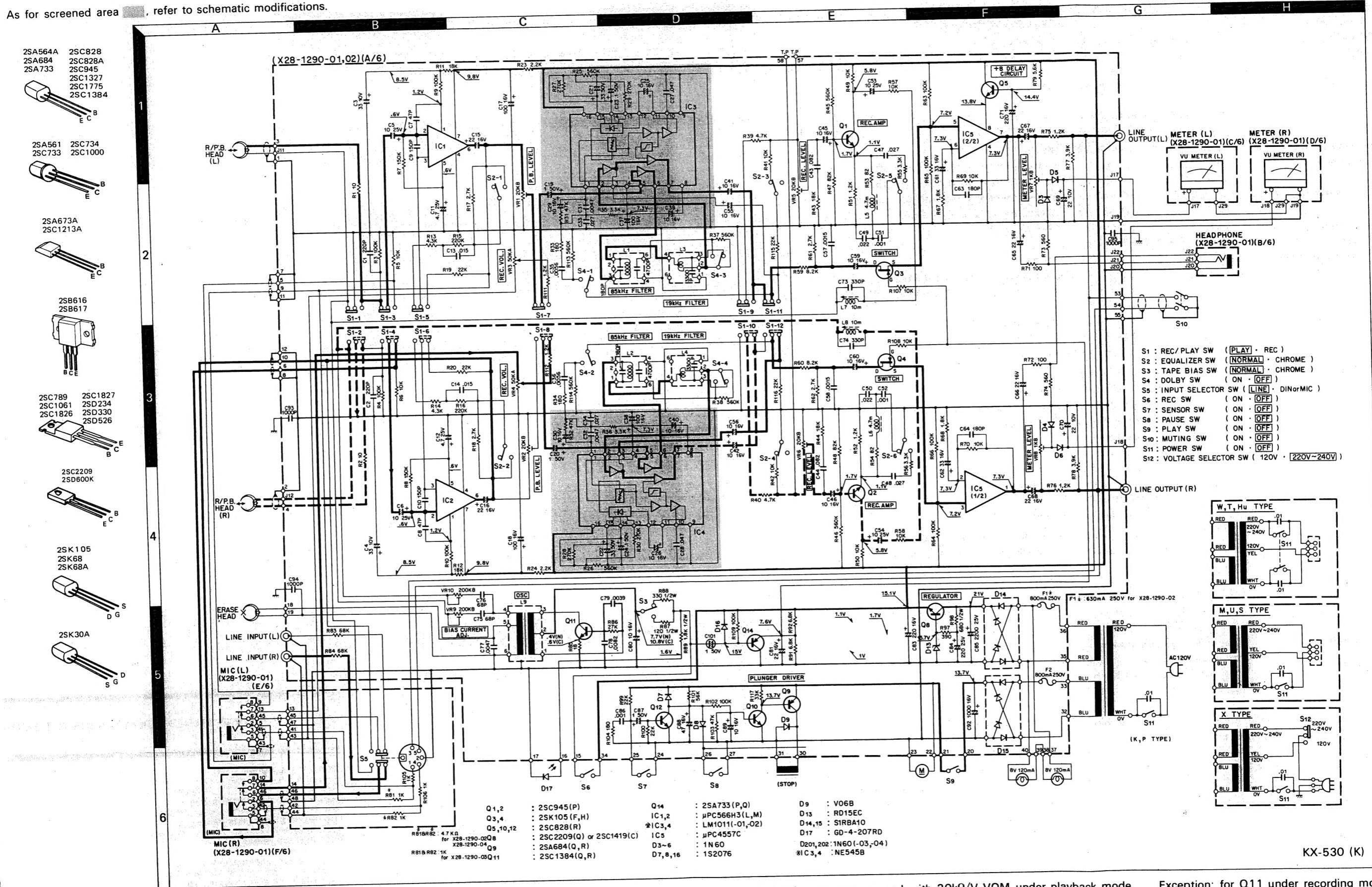


IC4:NE545B, D202:1N60

X28-1290-03, 04

## SCHEMATIC DIAGRAM

As for screened area **[REDACTED]**, refer to schematic modifications.



DC voltages are measured with 20k $\Omega$ /V VOM under playback mode.

Exception: for Q11 under recording mode.

## SPECIFICATIONS

Type	Front Loading Stereo Cassette Deck with Dolby System
Track System	4-Track, 2-Channel Stereo/Mono Recording/Playback
Recording System	AC Bias System (Bias Frequency: 85 kHz)
Erasing System	AC System
Tape Speeds	4.76 cm/sec (1-7/8 ips)
Heads	Hard Permalloy Recording/Playback Head x 1 Ferrite Erasing Head x 1
Motor	Electronically-Controlled DC Motor
Fast Winding Time	Approx. 85 seconds with C-60 tape
Frequency Response	Normal Tape: 30 Hz to 14,000 Hz (40 Hz to 13,000 Hz $\pm 3$ dB) Chrome Tape: 30 Hz to 16,000 Hz (40 Hz to 15,000 Hz $\pm 3$ dB)
Signal To Noise Ratio	Dolby ON: 62 dB (Normal Tape), 64 dB (Chrome Tape) Dolby OFF: 52 dB (Normal Tape), 54 dB (Chrome Tape)
Harmonic Distortion	Less than 1.5% (at 1 kHz, 0 VU, Normal Tape)
Wow and Flutter	0.07% (W.R.M.S.)
Input Sensitivity/Impedance	Line x 2 77.5 mV/100k ohms DIN x 1 16.0 mV/2.0k ohms Other Countries Model 0.1 mV/k ohms Europe, U.K., and Scandinavia Model Microphone x 1 0.15 mV/10k ohms
Output Level/Load Impedance	Line x 2 489 mV (0 VU)/100k ohms DIN x 1 489 mV (0 VU)/100k ohms Headphones x 1 48.9 mV/8 ohms to 16 ohms
Build in Features	Dolby Noise Reduction System Two Position Bias Selector (Normal-Chrome) Two Position Equalization Selector (Normal-Chrome) Full Auto Shut-Off Mechanism in all Modes LED Recording Indicator Three Digit Tape Counter Two Large Size Illuminated VU Meters Two Microphone Jacks, Headphone Jack DIN Rec/P.B. Connector
Power Requirements	AC 120V, 60 Hz: USA and Canada Model AC 120V/240V (Switchable), 50/60 Hz: Australia Model AC 120V/220-240V (Switchable), 50/60 Hz: Other Countries
Power Consumption	10 watts
Dimensions	W: 380 mm (14-31/32") H: 159 mm (6-1/4") D: 282 mm (11-1/8")
Weight	5.4 kg (11.9 lbs)
Supplied Accessories	Stereo Connection Cord x 2 Head Cleaning Kit x 1
Reference Tape	Normal: MAXELL UD-XLI Chrome: TDK SA

KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

**NOTE:** Dolby is a trademark of Dolby Laboratories, Inc.